

Remarks/Arguments

Reconsideration of this application, as amended, is respectfully requested.

The specification stands objected to as failing to provide proper antecedent basis for the subject matter set forth in claim 4, with the Examiner recommending that the range of effective depth set forth in claim 4 be inserted into paragraph [0017] of the specification. This recommended change has been made.

Claims 1-5 are pending in this application.

Claims 1-5 stand rejected under 35 U.S. C. 112, second paragraph, as being indefinite for the reason that claim 1 contains the term "finely", which is considered by the Examiner to be vague and indefinite as to the size of the particles, with the Examiner stating that: "Neither the specification nor claims give any indication as to what size limitations are meant by "finely". Applicant does not agree with this rejection. First, it is noted that, in lines 5 and 6 of paragraph [0013] of the specification, applicant has incorporated U.S. Patent No. 5,879,743 by reference, and that, at column 6, lines 57 - 61 of this patent, it is stated that the alloy "is in the form of a finely divided powder having particles typically ranging in size from 90 mesh (0.137 mm) to about 400 mesh (0.037 mm). Furthermore, even without such a reference, it is respectfully submitted that one skilled in the art would know what particle range to select for the alloy. First, as to what constitutes a powder, Volume 14 of the McGraw Hill Encyclopedia of Science and Technology (8th ed. 1997) states:

"Typically, metal powders for commercial use range from 1 to 1200 micrometers."

This converts into a range of from .001 mm to 1.2 mm. *Powder Metallurgy Science*, Randal M. Germain, Metal Powder Industries Federation (2d. ed. 1994) states:

"First, a powder is defined as a finely divided solid, smaller than 1 mm. in its maximum dimension.

Again, this indicates that the high end of the range is about 1 mm. In answer to frequently asked question "What is Powder?", A&A Company, Inc. states on their

web page (<http://aacoinc.co/faq.htm>) gives the following definition:

“Material manufactured into finely divided particles. When explicitly blended for thermal spraying, powder falls within a specific mesh range, usually finer than 120 mesh (125 microns). Fine powder is usually defined as having particles smaller than 325 mesh (44 microns).”

This agrees with the aforementioned statement made in U.S. Patent No. 5,879,743.

Claim 1 further stands rejected under 35 U.S.C. 112, second paragraph, as being indefinite due to the term “wear resistant”, with the Examiner Stating : “how much would “wear” have to be prevented or delayed.?” It is respectfully submitted that this term is well understood by those skilled in the art of coating objects to increase their wear life. If a coating has a characteristic of extending the so-called wear life of the coated component, then it is a wear resistant coating. The amount that the wear life is extended depends on the characteristics of the coating, its thickness, etc., all being within the ken of those skilled in the art.

Claim 1 further stands rejected under 35 U.S.C. 112, second paragraph, as being indefinite due to the term “increased wear” as appears in line 3, with the Examiner considering this term to be “confusing” and asking if applicant meant to say “increased wear resistance?”. Applicant has rewritten this term to state -- increased resistance to wear--.

Finally, claim 1 stands rejected under 35 U.S.C. 112, second paragraph, as being indefinite due to the term “an effective depth”, as appears in lines 4-5, with the Examiner stating that it “is unclear as to what is required for the depth to be considered effective” . As now presented, claim 1 defines the effective depth as being that depth required for preventing the layer of coating contacting the surface area of the part being coated from receiving diffused carbon to the extent that its melting point is changed causing the layer to flow during the fusing step.

Claims 1 and 5 stand rejected under 35 U.S. C. 103(a) as being unpatentable over Japan 2001-038791 in view of Jaeger. As now presented, claim 1 is thought to define subject matter not made obvious by this combination of references.

Specifically, among other structure, claim 1 requires that the cast iron part be

decarburized to a depth sufficient for preventing the boundary layer of the wear resistant coating from having its melting point lowered to the extent that the layer flows during the fusing the coating onto the cast iron part. It is the discovery of this problem caused by diffusion that is the crux of applicant's invention. When coating the same cast iron part without decarburization, adherence of the coating to the part is very good and no cracks or inclusions are present in the coating. Therefore, it is respectfully submitted that one skilled in the art would not have been led by the teachings of the Japanese reference nor by that of Jaeger to decarburize the cast iron part to overcome the melting problem encountered by the applicant.

Claims 2-5 depend from claim 1 and are likewise thought allowable.

In conclusion, it is believed that this application is in condition for allowance, and such allowance is respectfully requested.

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Respectfully,


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